A Dictionary of Neuropsychology

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Since it is well-known that human behavior is funneled through multiple neurological pathways, this book describes the current information of these major neurological connections and pathways and how impairments in any of these pathways will affect the behavioral outcome. Conversely, observed behavior is followed back to possible foci of function or injury.

Abbreviations and acronyms in medical notes are a fact of life. However, for the neophyte, it is not always easy to translate these abbreviations at first reading. Therefore, some more commonly used abbreviations, acronyms, and symbols found in medical notes are included in this book.

It was difficult to reach a cut-off point; there always seemed to be something more to add. However, the emerging field of neuropsychology will always have something new to add tomorrow.

D.M.G.

Sacramento, California
January, 1989

Preface

Neuropsychology is becoming a well-established specialty within the field of rehabilitation medicine. Neuropsychologists need to know many aspects of neurology, physiatry, psychiatry, and the various interpretations of the commonly used psychological tests as they relate to neuropsychology.

The emerging speciality in neuropsychology has prompted many experienced neuropsychologists to write text and reference books on the subject. Much of the test information for this book was taken from *Neuropsychological Assessment* by Murial Lezak (1983). Information on syndromes and detailed neurological functions was taken, in part, from *Fundamentals of Neuropsychology* by Kolb and Whishaw (1980), *Neurological Differential Diagnosis* by John Patton (1977), *Brain's Clinical Neurology*, 6th Ed., revised by Sir Roger Bannister (1985), and *Neuroanatomy and Neuropathology* by Reitan and Wolfson (1985).

The purpose of this book is to provide a cross-referenced, alphabetical listing of terms, common medical abbreviations, diseases, symptoms, syndromes, brain structures and locations, and test instruments used in neuropsychology and their neuropsychological interpretations. It is intended to be useful to all levels of neuropsychologists and, perhaps, others in related fields. It is what this author would have like to have had when first starting into this field and is a result of accumulated notes. Everything is alphabetized so that there is no need for an index; if multiple definitions or listings are made, each alphabetical listing of the subject is referenced to all related material.

Some historical information is included as well as current basic neuropsychological knowledge. In some cases, tests are simply described as to their diagnostic function so that if one were to need to explore deficits or assets in these certain functions, the reader would be able to use the test appropriately. Tests or test batteries may need to be administered by well-trained psychologists or speech pathologists; this fact is so stated. Most of the tests listed are published with a manual to guide the administration of the test. However, since neuropsychologists often use tests that were originally intended for uses other than neuropsychological assessment, the manuals may not always be adequate guides for neuropsychological interpretation. The intention of this book, in part, is to present any specialized administration and interpretation needed to answer the specific neuropsychological question as researched by practicing neuropsychologists.

A

A: Axis.

ABASIA: inability to walk.

ABCESS (BRAIN): begins as a small focus of purulent bacteria secondary to bacterial infection elsewhere in the body that causes necrosis (death) of cells in the affected region; as the organisms multiply and destroy more brain cells, the abcess behaves as an expanding mass, frequently hollow in the center, producing increasing intracranial pressure.

ABDUCENS NERVE: sixth cranial nerve; motor nerve that supplies the lateral rectus muscle of the eye; originates in the pons, beneath the floor of the fourth ventricle, emerging from the brainstem anteriorly between the pons and medulla oblongata.

ABDUCT: to draw away from the median plane or (in the digits) from the axial line of a limb.

ABIENT: avoiding the source of stimulation; said of a response to a stimulus.

ABLATION: removal or damaging of a part or tissue, particularly by cutting.

ABREACTION: the process of working off a repressed disagreeable experience by living through it again in speech and action; the method used to bring the repressed material into consciousness is called catharsis.

ABSENCE ATTACK: see petit mal seizure.

ABSOLUTE HEMIANOPIA: blindness to light, color, and form in half of the visual field.

ABSTRACT THINKING: ability to form concepts, use categories, generalize from single instances, apply procedural rules and general principles, be aware of subtle or intrinsic aspects of a problem, be able to distinguish what is relevant, what is essential, and what is appropriate; thought by Luria (1973) to take place in the tertiary zones of the cortical sensory unit (parietal, temporal, occipital lobes); Brodmann's areas 5, 7, 21, 22, 39, & 40.

ABSTRACT WORDS TEST: (Tow, 1955) a conceptual function test; sensitive to frontal-lobe disease.

ABULIA: loss or deficiency of will power, initiative, or drive; speech: laconic with long pauses between utterances; inability to sustain monologue and narrative; also see social abulia .

ABULIA-SOCIAL: social inactivity resulting from inability to select a course of action although a wish to participate may be present.

ABULOMANIA: mental disorder characterized by weakness of the will or indecision of character.

A

A/C: anticonvulsant therapy.

ACA: anterior cerebral artery.

ACALCULIA: inability to perform simple arithmetical calculations; lesion located in left parietal-lobe in the area of the angular gyrus; see also Gerstmann's Syndrome; Brodmann's areas 39 & 40, left (Hécaen, 1969).

ACCESSORY NERVE: see spinal accessory nerve (XI).

ACETYLCHOLINE (ACh): chemical neurotransmitter; secreted in synaptic endings; plays important role in the transmission of neuronal impulses; as soon as it excites the adjoining neuron it is destroyed by acetylcholine esterase (an enzyme) which restores the resting potential in the postsynaptic neuron.

ACh: acetylcholine.

ACHROMATOPSIA: inability to distinguish different hues in the presence of normally pigmented cells in the retina; cortical color blindness, which differs from congenital color blindness in that achromatopsia affects all parts of the color spectrum; colors appear less bright, and the environment is drained of color or, in severe cases, totally lacking color; results from bilateral lesions of Brodmann's areas 18, 19, & probably 37 (Meadows, 1974b) because the cells responsible for color coding have been destroyed.

ACOPIA: inability to copy complex spatial stimuli; may be a result of a disconnection syndrome following a sectioning of the corpus collosum.

ACOUSTIC APHASIA: auditory aphasia.

ACOUSTIC NERVE TUMOR: see cerebello-pontine angle lesions.

ACROMEGALY: characterized by enlargement of the extremities of the skeleton (nose, jaws, fingers, and toes); result of hypersecretion of somatotropic hormone; in adult, condition caused by hypersecretion of the pituitary growth hormone after maturity; the converse of acromicria; also called Marie's disease.

ACROMICRIA: a condition characterized by hypoplasia of the extremities of the skeleton (the nose, jaws, fingers, and toes); the converse of acromegaly; congenital acromicria is also called Down's syndrome.

ACROPARESTHESIA: most frequent in females; intense numbness, tingling, and prickling, in fingers and hands after being asleep for a few hours; also aching, burning pains or tightness; usually bilateral.

ACTH: see adrenocorticotropic hormone; also sometimes called corticotropin.

ACTING OUT: an expressing of unconscious mental conflicts in the form of overt behavior rather than in the form of neurotic symptoms.

ACTION TREMOR: seen in delirium tremens, chronic alcoholism (morning shakes), general paresis, hyperthyroidism and other toxic states, and anxiety; becomes worse when patient is observed; may be

abolished with ingestion of alcohol and becomes worse after effects of alcohol have warn off; see also delirium tremens.

ACTIVITY RATE: speed of mental and motor response; see also slowing.

AD: Alzheimer's Disease; also see SDAT.

ADAPTIVE BEHAVIOR SCALE: (Nihira et al., 1975) although primarily designed to evaluate the level of development of mentally retarded persons, it is applicable to the adaptive and cognitive deficits of the brain-injured patient; many items relate to daily living tasks and pathological behavioral symptoms such as violent and destructive behavior and social behavior; may be used for documenting changes in behavior or for treatment planning (Millham et al., 1976).

ADDUCTION: drawing toward the median plane or (in the digits) toward the axial line of a limb.

ADENOHYPOPHYSIS: the anterior (or glandular) lobe of the pituitary gland (hypophysis) as distinguished from the posterior lobe (neurohypophysis); of vital importance in growth, maturation, and reproduction; secretes growth hormone, ACTH, alpha-MSH, beta-MSH, TSH, FSH, LH, ICSH, and prolactin which regulate the proper functioning of the thyroid, gonads, adrenal cortex, and other endocrine organs.

ADENOMA: benign epithelial tumor in which the cells form recognizable glandular structures or in which the cells are clearly derived from glandular epithelium.

ADH: antidiuretic hormone; vasopressin.

ADIPSIA: loss of thirst.

ADIPOSITY: a state of being fat; obesity.

ADL: Activities of Daily Living.

ad. lib.: as much as needed; at discretion.

ADRENAL CORTEX: the outer layer of the adrenal gland; under the influence of the pituitary hormone, adrenocorticotropin, produces 40+ different hormones chemically known as steroids; has 4 functions: 1. regulates metabolism; 2. maintains blood pressure; 3. controls sexual appearance; 4. controls sexual behavior.

ADRENAL MEDULLA: central portion of the adrenal gland; secretes epinephrine and norepinephrine.

ADRENERGIC: activated by, characteristic of, or secreting epinephrine or substances with similar activity; the term is applied to those nerve fibers that liberate norepinephrine at a synapse when a nerve impulse passes, e. g., the sympathetic fibers.

ADRENOCORTICOTROPIC HORMONE: (ACTH) secreted by the anterior pituitary gland; a hormone that originates in the anterior pituitary gland and regulates the release of hormones by the adrenal cortex; increases the output of steroids from the adrenal cortex during stress.

A

AEP: average evoked potential.

AEROCELE: a tumor formed by air filling an adventitious pouch such as laryngocele and tracheocele.

AFFECT: range and appropriateness of emotional responses; the emotional complex associated with a mental state; the feeling experienced in connection with an emotion; emotional experiences evoked by particular stimuli; can be described as constricted (restricted), appropriate (broad, normal), labile (characterized by repeated, rapid and abrupt shifts that are inappropriate to the situation), blunted (a severe reduction in the intensity of affect expression), or flat (lack of signs of affective expression; the voice may be monotonous and the face immobile).

AFFECTIVE BEHAVIOR CONTROL: social affective behavior is thought to be complementarily specialized in right- and left-hemispheres where the left-hemisphere has a subordinate role, appearing to be more analytic or literal in its analysis of input while the right-hemisphere plays a major role in analyzing and producing emotionally toned stimuli and responses; function located in the amydala and portions of the anterior temporal cortex; these structures form a system that inputs to the hypothalamus (Papez, 1937).

AFFECTIVE DISORDERS: cerebral blood flow and PET scanning suggest a right frontal-lobe deficit (Buchsbaum, 1982; Golden, 1982).

AFFECTIVE STATE ABNORMALITIES: right-hemisphere lesions impair mimicry of emotional states (Tucker et al., 1977); indifference (joke telling, lack of interest) may be seen in right-hemisphere lesioned patients (Gainotti, 1972; Goldstein, 1939) reaction in left-hemisphere lesioned patients is usually associated with aphasia and may produce catastrophic or depressive reactions; tears and swearing often precipitated by repeated failures in verbal communication; correlated with the presence of contralateral neglect; frontal-lobe lesions reduce facial expressions (Kolb, 1977); left frontal-lobe lesions reduce spontaneous talking; right frontal-lobe lesions increase talking (Kolb et al., 1980).

AFFERENT: conveying toward a center, as an afferent nerve.

AFFERENT FIBERS: fibers that carry impulses to the brain via the dorsal columns of the spinal cord.

AFFERENT PARESIS: motor disorder associated with lesion(s) of the sensory afferent mechanisms.

AFFERENT PATHWAY LESION (EYE): see Marcus-Gunn pupil.

AFTERBRAIN: metencephalon.

AGCT: Army General Classification Test.

AGE DECREMENTS: visual nonverbal memory declines more rapidly than other forms of nonverbal memory in the 60 to 80 decades; auditory or tactile memory shows greater decline than visual in the decades between 40 & 60 (Riege & Williams, 1980); diminished

ability for abstract and complex conceptualization (Botwinick, 1977; Denney, 1974; Reitan, 1967); mental inflexibility which causes difficulty in adapting to new situations, solving novel problems, or changing mental set (Botwinick, 1977, 1978: Kramer & Jarvik, 1979; Schaie, 1958; Williams, 1970); behavioral slowing that affects perceptual (Hines & Posner, n.d.; Kramer & Jarvik, 1979), cognitive (Botwinick, 1977; Thomas et al., 1977), memory functions, and psychomotor activity (Benton 1977; Hicks & Birren, 1970; Welford, 1977); WAIS or WAIS-R scores on the Block Design, Object Assembly, & Digit Symbol subtests are usually the most affected by age decrements; Trail Making Test A & B may also show the effects of aging, particularly B.

AGENESIS OF THE CORPUS CALLOSUM: complete or partial absence of the corpus callosum; 3 types: 1. absence of the telencephalic commissures; 2. absence of corpus callosum with preserved anterior and hippocampal commissures; 3. partial absence of the posterior part of the corpus callosum.

AGEUSIA: loss of taste; loss of taste of the posterior third of tongue is controlled by the glossopharyngeal nerve (IX).

AGEUSIC APHASIA: loss of power to express words relating to the sense of taste.

AGGRESSIVE BEHAVIOR: see thalamus, Raphè Nucleus or tegmentum, hypothalamus, and amygdala.

AGITATED: a state of continued restless, purposeless activity expressive of nervous tension and anxiety.

AGNEA: a condition in which objects are not recognized.

AGNOSIA: defect in the formulation and use of symbolic concepts, including the significance of numbers and letters, the names of parts of the body or recognition, knowing, and understanding the meaning of stimuli; loss of power to recognize the importance of sensory stimuli; the varieties correspond with several senses and are distinguished as auditory, visual, olfactory, gustatory, tactile, color, finger, time, body-image, ideational, and simultaneous.

AGNOSIA - AUDITORY: a receptive aphasia characterized by inability to recognize the significance (meaning) of sounds of the spoken language in the absence of physical disability of hearing; also called cortical deafness or auditory verbal agnosia; hears, but does not recognize or understand what is heard; see also agnosia for sounds.

AGNOSIA - BODY-IMAGE: see autotopagnosia.

AGNOSIA - FINGER: loss of ability to indicate one's own or another's fingers; also see Gerstmann's Syndrome.

AGNOSIA - IDEATIONAL: (secondary somatosenory agnosia) loss of the special associations which make up the idea of an object from its component ideas; also see asymbolia, somatosensory agnosia.

AGNOSIA - PRIMARY: inability to recognize tactile qualities of an

object because of an inability to evoke tactile images; may be a result of lesions in either hemisphere, in the postcentral gyrus or the thalamoparietal projections (association areas); may not appreciate the size, form, consistency and weight of an object; inability to identify an object by palpatation although primary sense data (touch, pain, temperature, and vibration) are intact.

AGNOSIA FOR SOUNDS/AUDITORY AGNOSIA: inability to identify the meaning of nonverbal sounds, such as a bell ringing; sounds either may sound all alike or be confused with one another; most often amusia and word deafness are associated; may also be a result of confusion of the auditory percept because of disconnection from the verbal or memory components necessary to label the sound; thought to be bilateral temporal-lobe dysfunction (Brodmann's areas 22 & 42).

AGNOSIA - TACTILE: inability to recognize familiar objects by touch; primary agnosia; see also tactile agnosia, astereognosia.

AGNOSIA - TIME: loss of comprehension of the succession and duration of events; see also time agnosia.

AGNOSIA - VISUAL: inability to recognize familiar objects by sight; see also visual agnosia.

AGONAL: pertaining to the death agony; occurring at the moment of or just before death.

AGONIST MUSCLE: prime mover; opposed by antagonist muscle.

AGORAPHOBIA: morbid fear of being in large open spaces.

AGRAMMATISM: sharply contracted sentence structure, lacking most small grammatic words, often with faulty use of grammar in the words remaining; loss of words such as "the" and "is" as well as grammatical inflectional endings such as plurals and past tense; lesion in the frontal operculum or insula.

AGRAPHIA: an expressive aphasia characterized by the inability to express thoughts in writing, due to a lesion of the cerebral cortex. Writing requires the translation of a language item into symbols. Linguistic messages originate in the posterior language area (Wernicke's area), are translated into visual symbols in the inferior parietal area (lesion causes agraphia with alexia), and are sent to the frontal language area (Broca's) for motor processing; lesions in any of these areas or pathways will cause agraphia; all aphasics show some agraphia; not all patients with agraphia are aphasic; does not refer to poor handwriting, gross spelling errors, or paragraphias; also see Gerstmann's syndrome.

AKATHISIA: motor restlessness ranging from a feeling of inner disquiet to inability to sit, lie quietly, or sleep; repetitive tapping and fiddling with hands and feet and facial mannerisms; seen in toxic reactions to neuroleptic medication such as phenothiazines.

AKINESIA: disinclination of the patient to use an affected part of the

body, to engage it freely in all the natural actions of the body; absence or poverty of movement; see cerebellar lesions.

AKINETIC: absence or poverty of movements.

AKINETIC MUTISM: a state characterized by wakefulness but lacking impulse for speech and action; uncanny appearance of awareness; also called coma vigil; if the lesion is cortical, the patient appears much more alert and awake most of the time; the eyes remain open when awake; may have violent outbursts when aroused by external stimuli; lesion(s) may be in the subthalamic region, septal area, anterior hypothalamic area, cingulate gyri, bilateral orbital-frontal area, or may be cortical; may be due to rupture of the anterior communicating artery; if there are positive Babinski signs (increased reflexes), the lesion involves the corticospinal tract; if temperature control dysfunction is present, the lesion is in the anterior hypothalamic area; if primitive reflexes (snout and grasp) are present, the lesion is in the mesial frontal-lobe area; if the patient is difficult to arouse and drifts back to sleep or looks away when awakened (apathetic akinetic mutism), lesion(s) is in midbrain subthalamic or septal region.

AKINETIC EPILEPSY: (in adults) characterized by a sudden fall to the ground without warning; unawareness of the fall; usually gets up immediately; usually affects middle-aged obese women without history of epilepsy; often associated with cervical osteoarthritis and presumed to be a result of brainstem ischemia from compression of the vertebral arteries by cervical osteophytes (Brain, 1985).

AKINETIC SEIZURE: most often seen in children; usually the child collapses suddenly and without warning; usually of few seconds duration with no postictal depression; the falls may be quite dangerous; most children who have this disease wear protective head-gear.

ALALIA: lack of ability to talk.

ALCOHOL: ETOH; ethanol.

ALCOHOLIC DEMENTIA: loss of the abstract attitude and impaired visuomotor performance distinguish this condition from Korsakoff's psychosis (Horvath, 1975; Lishman, 1978, 1981); may also display some Korsakoff's psychosis symptoms.

ALCOHOLISM: dipsomania.

ALCOHOLISM CEREBELLAR GAIT: wide-base and short steps, trunk inclined slightly forward, arms held away from body; seen in chronic alcoholism and Korsakoff's disease.

ALCOHOLISM - CHRONIC: chronic alcohol abuse affects certain aspects of intellectual functioning while leaving many intellectual activities relatively unimpaired (Parsons, 1977; Parsons & Farr, 1981; Tarter, 1975, 1976). Binge drinkers appear to be less prone to alcohol-related cognitive deficits than those with a heavy daily alcohol intake (Sanchez-Craig, 1980.). Intellectual deficits consis-

tently appear on tasks involving functions associate with frontal-lobe activity (Bolter & Hannon, 1980; Parson, 1977; Talland, 1965b; Tarter, 1975; Tarter & Jones, 1971); difficulties in maintaining a cognitive set, impersistence, decreased flexibility in thinking, defective visual searching behavior, deficient motor inhibition, perseveration, loss of spatial and temporal orientation, and impaired ability to organize perceptuomotor responses and synthesize spatial elements characterize the test behavior of chronic alcoholics; characteristically perform relatively poorly on speed-dependent visual scanning tasks such as the Digit Symbol subtest of the Wechsler Intelligence Scales, the Trail Making tests, tests of motor speed, and tests of visuospatial organization of which the Wechsler Block Design subtest and the Tactual Performance Test are representative examples (Kapur & Butters, 1977; Parsons & Farr, 1981; Tarter, 1975). Verbal and arithmetic skills of the Wechsler Verbal Scale subtests generally remain relatively unimpaired; impaired motor control and integration; no consistent performance decrement on perceptuomotor tasks or motor coordination tasks that require little or no synthesizing, organizing, or orienting activity (Hirschenfang et al., 1968; Tarter, 1975, Vivian et al., 1973); subtle but consistent short-term memory and learning deficits that become more evident as task difficulty increases (Ryan & Butters, 1980b, 1982; Ryan, Butters, Adinolfi, & DiDario, 1980); deficits may be a breakdown in encoding strategies (Ryan et al., 1980). Remote memory is particularly resistant to deterioration in alcoholics (M. S. Albert et al., 1980); the greatest amount of return of function takes place in the first week of abstinence and slows down rapidly thereafter, leveling off at three to six weeks (Lezak et al., 1983).

ALERT STATE: fully awake and fully aware of normal external and internal stimuli; capable of meaningful interaction with others; basic anatomical structures which control the alert state include the brainstem reticular system and the diffuse thalamic projection system (diencephalic extension of the reticular formation).

ALEXIA/DYSLEXIA: Failure to visually recognize words; word blindness; inability to read; *cortical alexia*: a form of sensory aphasia due to lesions of the left angular gyrus; *motor alexia*: the patient understands what he sees written or printed but cannot read it aloud; *optical alexia*: word blindness; *subcortical alexia*: interruption of the connection between the optic center and the angular gyrus; lesion(s) in the left angular gyrus and/or left occipital-lobe; Brodmann's areas 7 & 40, left (Hécaen & Albert, 1978).

ALEXIA AND INABILITY TO NAME COLORS WITHOUT AGRAPHIA: lesion in the left occipital-lobe and splenium of corpus callosum.

ALEXIA WITH AGRAPHIA: unable to read or write; may not be

aphasic, but may have anomia; in a right-handed patient, the lesion is in the left inferior-parietal area (angular gyrus area).

ALEXIA WITHOUT AGRAPHIA: patient is able to write normally, but is not able to read his own writing; able to understand words spelled aloud; good naming; caused by a left posterior cerebral artery occlusion in right-handed patients; the infarct damages the posterior portion of the corpus callosum and left occipital-lobe; the visual information enters the right-hemisphere but cannot be transmitted to the left-hemisphere because of damage to the corpus callosum.

ALLESTHESIA: sensory dysfunction; the sensation of touch experienced at a point remote from the point actually touched.

ALLESTHESIA-VISUAL: illusory displacement of images from one side of the visual field to the other.

ALLOCENTRIC SPATIAL RELATIONS: (Semmes et al., 1963) extrapersonal orientation (map-following) as opposed to egocentric spatial relations (personal/bodily orientation).

ALLOCHIRIA: a condition in which, if one extremity is stimulated, sensation is referred to the opposite side.

ALPHA-MSH: alpha-melanocyte-stimulating hormone; secreted by the adenohypophysis; a peptide which influences the formation of deposition of melanin in the body.

ALPHA MOTOR NEURON: connects with and excites a skeletal muscle.

ALPHA RHYTHM: dominant rhythm of the posterior cortex at 8-to-12 cycles/second; generally found when a person is relaxing but awake.

alt.: alternate.

alt. hor.: every other hour.

alt. noc.: every other night.

ALTERNATING HAND MOVEMENT DEFECTS: may be either cortical (Lezak, 1983) or subcortical (Heilman, 1979); loss of sequence or perseveration suggestive of loss of ability to move from one motor movement to another and inability to shift sets; dysfunction of premotor cerebral cortex (frontal-lobe); may be tested with the fist-palm-side test adapted from Luria (1973a).

ALTERNATE HEMIPLEGIA: paralysis of one part on one side of the body and another part on the opposite side.

ALTERNATING OCULOMOTOR HEMIPLEGIA: see Weber's syndrome.

ALTITUDE ANOXIA: anoxia caused by the reduced pressure of oxygen at high altitudes.

ALTITUDINAL HEMIANOPIA: defective vision or blindness in a horizontal half of the visual field.

ALZHEIMER'S DISEASE (AD/SDAT): characterized by progressive degenerative nerve cell changes within the cerebral hemispheres with concomitant progressive global deterioration of intellect and

personality (Roth, 1978); before age 59/64 called AD; after age 59/64 called SDAT (senile dementia of the Alzheimer's type); also called primary degenerative dementia; neuropathological indicators are neurofibrillary tangles and senile plaques throughout the brain, but particularly in hippocampal and amygdaloid areas (Berry, 1975; Lishman, 1978; Terry, 1980); a greater amount of senile plaques are found in the parietal-lobe (Roth, 1978); thinning of the cortical mantle, enlargement of the lateral ventricles, and flattening of the surface of the cortex; may be lower tissue densities in frontal- and temporal-lobes and the anterior portion of the caudate nucleus within the corpus striatum (Bondareff et al., 1981); etiology unknown; *Early signs*: failing recent memory, depression, irritability, and sometimes seizures; early symptoms of inattentiveness, mild cognitive dulling, social withdrawal, and emotional blunting or agitation are often confused with depression; perseveration s (speech); paralogisms with syntax preserved (Golper & Binder, 1981; Marin & Gordon, 1979); dysnomia; intrusions; language impairment my include loss of spontaneous speech or intrusions (Fuld et al., 1982; Lezak, 1983) and /or dysfluency such as paraphasias and articulatory errors (Golper & Binder, 1981; Obler & Albert, 1980); memory impairment and depression usually precede personality deterioration; *Late signs*: restless apathy may alternate with aggressive demands for attention and petulant irritability; *Final stages:* severe handicapping apraxias, disruption of effective speech production, disturbances of posture and gait, incontinence, totally dependency, and bedridden; *Neuropsychological Assessment*: on the WAIS the highest scores are achieved on tests of overlearned behaviors presented in a familiar format and immediate memory recall (Information, Vocabulary, Comprehension, and Similarities and Digits Forward); poor scores are achieved on Block Design, Digit Symbol, Digits Backward, and Object Assembly subtests; Object Assembly subtest score may be a little higher than scores on the Block Design and Digit Symbol subtests; Vocabulary subtest score at least twice as large as Block Design subtest score is a highly likely indicator of dementia and rarely occurs among depressed patients (Coolidge, 1982); patients may fail reasoning such as Raven's progressive matrices, unfamiliar, or timed tests such as verbal fluency tests, and both storage and retrieval components of memory learning tests (Fuld, 1978; Gainotti et al., 1980; Lezak, 1983); see also Pick's disease.

ALZHEIMER WAIS SCORES: see WAIS subtest scores, Alzheimer's.

AMAUROSIS: blindness from any cause; especially blindness occurring without apparent lesion to the eye.

AMBIDEXTERITY: the ability to perform acts requiring manual skill with either hand.

A

AMBIGUOUS VISUAL STIMULI TEST: Rorschach.

AMBIVALENCE: the simultaneous existence of contradictory and contrasting emotions.

AMBLYOPIA: impairment or loss of vision which is not due to an error refraction or to other diseases of the eye.

AMBLYOPIA EX ANOPSIA: diminished visual acuity due to strabismus and the suppression of images in one eye; lazy eye.

AMEBIASIS: amebic dysentery; caused by an infestation of the protozoan ameba, Entomoeba histolytica, resulting in encephalitis and brain abscesses.

AMENORRHEA: absence or abnormal stoppage of the menses.

AMENTIA: congenital feeblemindedness.

AMINO ACIDS: a class of organic compounds that form the chief structure of proteins, several of which are essential for human nutrition (natural amino acids); essential amino acid is one that is essential for optimal growth in a young animal or for nitrogen equilibrium in an adult.

AMNEMONIC APHASIA: forgetfulness of words with consequent aphasia.

AMNESIA: partial or total loss of memory; loss of past memory coupled with an inability to form new memory traces or to learn; see also retrograde amnesia, anterograde amnesia, posttraumatic amnesia, PTA.

AMNESIA-ANTEROGRADE: see anterograde amnesia.

AMNESIA-RETROGRADE: see retrograde amnesia.

AMNESIC APRAXIA: loss of ability to carry out a movement on command as a result of inability to remember the command although ability to perform the movement is present.

AMNESIC THEORY ON LEARNING: (Warrington & Weiskrantz, 1978) amnesics have difficulty controlling and restraining the influence of prior learning on present performance; may be a type of response disinhibition that manifests as perseveration.

AMNESTIC-DYSNOMIC APHASIA: loss of ability to produce names on demand including nouns, adjectives, and other descriptive parts of speech; pauses in speech; groping for words; substitution of other words or phrases that conveys the meaning (circumlocution); early or isolated manifestation of disease of the nervous system; caused by lesion(s) deep in the temporal-lobe or left parietal-lobe; interrupts connections of sensory speech areas with the hippocampal/parahippocampal regions; concerned with learning and memory; usually due to mass lesions; may be involved in early Alzheimer's disease and senile dementia or in confusional states caused by metabolic, infectious, intoxicative or other acute medical illnesses.

AMOK: a psychiatric disturbance marked by a period of depression followed by violent attempts to kill people.

A

AMOSMIC APHASIA: inability to express, in words, sensations of smell.

AMPHETAMINE: a drug that causes an initial elevation in mood and energy through an increase in norepinephrine; CNS stimulant that raises blood pressure, reduces appetite, reduces nasal congestion, and may cause insomnia; abuse may lead to auditory/visual hallucinations, loss of REM sleep, agitation, paranoia, and depression following withdrawal.

AMUSIA: defective perception of music or its components (i.e., rhythm, pitch, timbre, measure, tempo, or harmonics); auditory agnosia for music; includes tone deafness, melody deafness; usually associated with temporal-lobe disease, and is more likely to occur with right- than left-sided lesions; roughly Brodmann's areas 22 and 42.

AMUSIA TESTS: the examiner can whistle or hum several simple and generally familiar melodies which the patient can identify; pitch discrimination can be tested with a pitch pipe; rhythm patterns can be evaluated by requiring the patient either to discriminate similar and different sets of rhythmic taps or to mimic patterns tapped out by the examiner; tests available in the Luria/ Christiansen battery or the Luria-Nebraska Test.

AMYELIA: total absence of spinal cord; only found in association with anencephaly.

AMYGDALA: almond shaped mass; see amygdaloid nucleus.

AMYGDALOID NUCLEUS: small mass of subcortical gray matter located within the tip of the temporal-lobe; anterior to the inferior horn of the lateral ventricle of the brain (anterior and medial part of the temporal-lobe); has direct connections with the primitive centers involving the sense of smell; has partial control over semi-automatic viseral activities concerned with feeding such as chewing, salivating, licking, gagging, and viseral components of the fear reactions; controls mediation of defensive-aggressive behavior; integrates coordinates, and directs the activity of the more primitive emotional centers of the midbrain, hypothalamus, and thalamus; plays role in positive reinforcement and goal-directed behavior; also involved in memory retrieval.

AMYGDALOID NUCLEUS ABLATION: eliminates uncontrollable rage reactions in psychotic patients.

AMYGDALOID NUCLEUS LESION: tends to produce a marked calming and taming effect; animals lose fear and aggressive tendencies and are unable to compete appropriately in social situations; may show compulsive, oral behavior and hypersexuality-like behavior; impaired ability to associate reward with environmental stimuli; irrational violence that often accompanies temporal-lobe (psychomotor) epilepsy.

AMYGDALOID NUCLEUS SEIZURES: typically cause brief olfac-